

Application No. 10/773,860
Amendment dated October 12, 2006
After Final Office Action of September 6, 2006

Docket No.: 30320/18023

AMENDMENTS TO THE CLAIMS

1. (Previously presented) An article comprising a machine-accessible medium having stored thereon instructions that, when executed by a machine, cause the machine to:

measure power usage on the machine;

determine when a quantum of power has been used on the machine;

in response to usage of the quantum of power on the machine, trigger sampling of state data of the machine, where the state data indicates a state of code executing on the machine;

analyze performance of the code executing on the machine based on sampled state data; and

develop a machine storable profile of power usage of the code executing on the machine.

2. (Previously presented) The article of claim 1, having further instructions that, when executed by the machine, cause the machine to:

provide the sampled state data to a performance analysis module; and

compare the sampled state data to previously sampled state data for determining the profile of power usage of the code based on the state data.

3. (Original) The article of claim 1, wherein the machine has a power measurement module.

4. (Original) The article of claim 3, wherein the machine comprises a plurality of subsystems and wherein the power measurement module is coupled to at least one of the plurality of subsystems for measuring power usage of the at least one of the plurality of subsystems.

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5. (Original) The article of claim 4, having further instructions that when executed on the machine, cause the machine to:

measure power usage of at least one of the plurality of subsystems.

6. (Original) The article of claim 5, wherein the at least one of the plurality of subsystems includes a network subsystem, a graphics display subsystem, or a data storage subsystem.

7. (Original) The article of claim 5, wherein the at least one of the plurality of subsystems includes an input/output device or an expansion slot subsystem.

8. (Previously presented) The article of claim 1, wherein the state data is a program counter indicative of a state of execution of the code.

9. (Previously presented) The article of claim 1, wherein the state data comprises a program counter, status of the machine, status of at least one subsystem of the machine, status of at least one component of the machine, or status of at least one functional unit embedded in a subsystem.

10. (Previously presented) A method of profiling code executable on a machine, the method comprising:

measuring power usage on the machine;

determining when a plurality of a quantum of power has been used on the machine;

in response to usage of the quantum of power on the machine, sampling state data on the machine, where the state data indicates a state of code executing on the machine;

analyzing performance of the code executing on the machine based on sampled state data; and

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developing a machine storable profile of power usage of the code executing on the machine.

11. (Original) The method of claim 10, wherein the machine comprises a plurality of subsystems, and wherein measuring power usage comprises measuring power delivered to at least one of the plurality of subsystems.

12. (Original) The method of claim 10, wherein the machine comprises a plurality of subsystems, measuring power usage comprising measuring power consumed by at least one of the plurality of subsystems.

13. (Original) The method of claim 10, wherein the machine comprises a plurality of subsystems and a power measurement module capable of measuring current or power delivered to at least one of the plurality of subsystems.

14. (Original) The method of claim 13, wherein the at least one of the plurality of subsystems includes a network subsystem, a graphics display subsystem, or a data storage subsystem.

15. (Original) The method of claim 13, wherein the at least one of the plurality of subsystems includes an input device or an expansion slot device.

16. (Original) The method of claim 10, further comprising:

providing power to the machine.

17. (Previously presented) The method of claim 10, wherein determining the profile of power usage of the code executing on the machine comprises:

comparing the state data sampled over a plurality of quantums of power usage and profiling instructions or functions executed by the code during the usage the plurality of quantums of power usage.

18. (Original) The method of claim 10, wherein the state data is a program counter.

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19. (Original) The method of claim 10, wherein the state data comprises a program counter, status of the machine, status of at least one subsystem of the machine, status of at least one component of the machine, or status of at least one functional unit embedded in a subsystem.

20. (Currently amended) An apparatus comprising:

a power measurement module capable of measuring power usage in the apparatus and capable of determining when a quantum of power has been used over a period of time and capable of adjusting granularity of the quantum of power; and

a power sampling module coupled to the power measurement module for sampling state data of the apparatus, where sampling is triggered by in response to an indication from the power measurement module ~~of when each of a plurality of the~~ ~~quantums~~ of power has been used, ~~the power measurement module being disposed to indicate the usage of the quantum of power to the power sampling module~~; and

a power analysis module that analyzes code executing on the apparatus in response to the sampling of the state data to develop a power profile of the code.

21. (Original) The apparatus of claim 20, further comprising a power source.

22. (Previously presented) The apparatus of claim 20, wherein the power analysis module compares the sampled state data to stored state data.

23. (Original) The apparatus of claim 20, wherein the state data comprises a program counter, status of the machine, status of at least one subsystem of the machine, status of at least one component of the machine, or status of at least one functional unit embedded in a subsystem.

24. (Previously presented) The article of claim 1, having further instructions that when executed on the machine, cause the machine to profile the code executing on the machine by profiling the power usage of instructions or functions executed by the code.

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25. (Previously presented) The article of claim 1, wherein the machine comprises a plurality of subsystems, the article having further instructions that when executed on the machine, cause the machine to determine the power usage of the code executing within one of the plurality of subsystems.

26. (Previously presented) The article of claim 1, wherein the state data comprises a stack pointer, current memory usage, a number of instructions executed, or a number of accesses to a memory storage.

27. (New) The article of claim 1, having further instructions that when executed on the machine cause the machine to adjust granularity of the quantum of power.

28. (New) The article of claim 1, wherein the machine has a power measurement module, a central processing unit, and a plurality of functional units embedded within the central processing unit, wherein the power measurement module is coupled to the central processing unit for measuring power usage of at least one of the plurality of functional units enabled within the central processing unit.